



12BH7-A

MEDIUM-MU TWIN TRIODE

9-PIN MINIATURE TYPE

*Intended for use in equipment having
series heater-string arrangement*

12BH7-A

GENERAL DATA

Electrical:

Heater, for Unipotential Cathodes:

Heater arrangement	Series	Parallel	
Voltage	12.6	6.3	ac or dc volts
Current	0.3	0.6	amp
Warm-up time (Average) . .	—	11	sec

For definition of heater warm-up time and method of determining it, see sheet HEATER WARM-UP TIME MEASUREMENT at front of this Section.

Direct Interelectrode Capacitances (Approx.):^o

	Unit No.1	Unit No.2	
Grid to plate	2.6	2.6	$\mu\mu\text{f}$
Grid to cathode and heater.	3.2	3.2	$\mu\mu\text{f}$
Plate to cathode and heater.	0.5	0.4	$\mu\mu\text{f}$
Plate of unit No.1 to plate of unit No.2	0.8		$\mu\mu\text{f}$

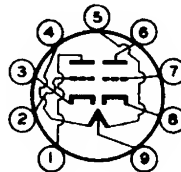
Mechanical:

Mounting Position Any
Maximum Overall Length 2-5/8"
Maximum Seated Length 2-3/8"
Length, Base Seat to Bulb Top (Excluding tip) . . . 2" $\pm$ 3/32"
Maximum Diameter 7/8"
Bulb T-6-1/2

Base Small-Button Noval 9-Pin (JETEC No.E9-1)

Basing Designation for BOTTOM VIEW 9A

Pin 1-Plate of Unit No.2	Pin 6-Plate of Unit No.1
Pin 2-Grid of Unit No.2	Pin 7-Grid of Unit No.1
Pin 3-Cathode of Unit No.2	Pin 8-Cathode of Unit No.1
Pins 4 & 9-Heater of Unit No.2	Pin 9-Heater Mid-Tap
Pins 5 & 9-Heater of Unit No.1	



AMPLIFIER - Class A₁

Values are for Each Unit

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE 300 max. volts

^o Without external shield.

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GRID VOLTAGE:

Negative bias value 50 max. volts
Positive bias value 0 max. volts

CATHODE CURRENT 20 max. ma

PLATE DISSIPATION 3.5 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode . 200 max. volts
Heater positive with respect to cathode . 200[▲]max. volts

Characteristics:

Plate Voltage 250 volts

Grid Voltage -10.5 volts

Amplification Factor 16.5

Plate Resistance (Approx.) 5300 ohms

Transconductance 3100 μ hos

Plate Current 11.5 ma

Plate Current for grid
voltage of -14 volts 4 ma

Grid Voltage (Approx.) for
plate current of 50 μ amp -23 volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias operation 0.25 max. megohm
For cathode-bias operation 1.0 max. megohm

HORIZONTAL DEFLECTION OSCILLATOR

Values are for Each Unit

Maximum Ratings, Design-Center Values:

For operation in a 525-line, 30-frame system[□]

DC PLATE VOLTAGE 450 max. volts

PEAK NEGATIVE-PULSE GRID VOLTAGE[▲] 600 max. volts

CATHODE CURRENT:

Peak 300 max. ma

Average 20 max. ma

PLATE DISSIPATION 3.5 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode . 200 max. volts
Heater positive with respect to cathode . 200[▲]max. volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias, grid-resistor bias, or
cathode-bias operation 2.2 max. megohms

[▲] This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

[▲], [□]: See next page.

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MEDIUM-MU TWIN TRIODE

VERTICAL DEFLECTION OSCILLATOR

Values are for Each Unit

Maximum Ratings, Design-Center Values:

For operation in a 525-line, 30-frame system[□]

DC PLATE VOLTAGE	450 max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE	400 max.	volts
CATHODE CURRENT:		
Peak	70 max.	ma
Average	20 max.	ma
PLATE DISSIPATION	3.5 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200 [▲] max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias, grid-resistor bias, or
cathode-bias operation 2.2 max. megohms

VERTICAL DEFLECTION AMPLIFIER

Values are for Each Unit

Maximum Ratings, Design-Center Values Except as Noted:

For operation in a 525-line, 30-frame system[□]

DC PLATE VOLTAGE	450 max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE [#]		
(Absolute Maximum)	1500 [■] max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE	250 max.	volts
CATHODE CURRENT:		
Peak	70 max.	ma
Average	20 max.	ma
PLATE DISSIPATION	3.5 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200 [▲] max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For cathode-bias operation 2.2 max. megohms

[▲] The dc component must not exceed 100 volts.[□] As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.[#] This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.[■] Under no circumstances should this absolute value be exceeded.

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TENTATIVE DATA 2

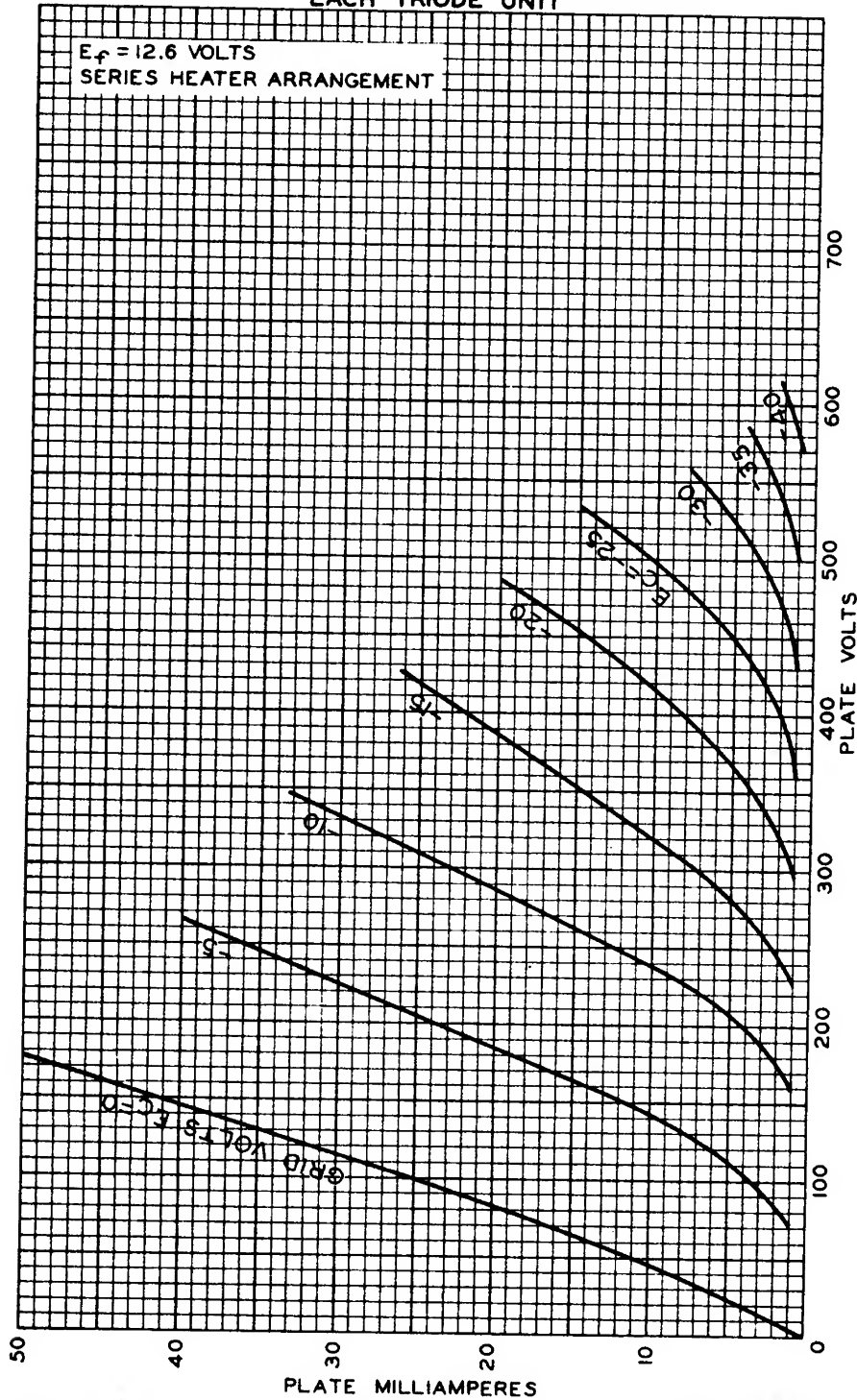
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AVERAGE PLATE CHARACTERISTICS
EACH TRIODE UNIT



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